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10/534,359	11/04/2005	Cyril Valadon	TTP104248	4862

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EXAMINER	
AHMED, ENAM	

ART UNIT	PAPER NUMBER
2112	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	**Application No.** 10/534,359	**Applicant(s)** VALADON, CYRIL	
	Examiner ENAM AHMED	**Art Unit** 2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 August 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *20-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *20-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Non – Final Rejection

This office action is in reply to applicants amendment filed on 8/14/08.

Response to applicant's arguments

The applicants arguments have been fully considered, and are found persuasive only to the extent that new NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) teaches claim 20 subset [1] – performing a test on candidate formats in turn but refraining from testing further candidate formats once a candidate format passes the test, wherein the test determines whether or not a candidate format is likely to be the format used on the signal and the test, for a given candidate format (pg. 59 – B. Decoding Algorithms for tailbiting codes); subset [2] – using a Viterbi algorithm to determine trellis metrics for a point in said signal that would be an end point of a candidate block according to the given candidate format (pg. 60 – C. A Circular Viterbi Algorithm); subset [3] – determining from said metrics the likelihood of occupation at said point of an end state of an encoding scheme used to create the encoded signal (pg. 60 – C. A Circular Viterbi Algorithm); subset [4] - decoding a part of said signal ending at said point (pg. 61 - III. Stopping rules and traceback procedure for the circular viterbi algorithm) and subset [5] – performing a check using said decoded part to determine whether the candidate block satisfies an error protection scheme of the given candidate format (pg. 60 – C. A Circular Viterbi Algorithm).

Response to applicant's remarks

With respect to claim 20, on page 7 the applicant mentions unlike the requirements of limitations subset [1], no test on hypothesized modes, i.e., "candidate formats" is required in Ramprashad. In the claimed invention, candidate formats are tested in turn, and no mode bits are included in the encoded signal. This is a significant difference between the claimed methodology and Ramprashad.

The examiner respectfully agrees with the statement, however points out new NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) teaches claim 20 subset [1] – performing a test on candidate formats in turn but refraining from testing further candidate formats once a candidate format passes the test, wherein the test determines whether or not a candidate format is likely to be the format used on the signal and the test, for a given candidate format (pg. 59 – B. Decoding Algorithms for tailbiting codes)

With respect to claim 20, on page 8 the applicant mentions the requirement is to determine trellis metrics for a point in the signal that would be an end point of a candidate block. A "path", however, is totally different from metrics for an end point. It follows, then, that since neither Ramprashad nor Nagata discloses determining and end point of a candidate block, these prior art references also cannot disclose the features of limitation subset [4], namely decoding a part of said signal ending at said point (i.e., the end point).

The examiner respectfully agrees with the statement, however points out new NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) teaches claim 20 – subset [3] determining from said metrics the likelihood of occupation at said point of an end state of an

encoding scheme used to create the encoded signal (pg. 60 – C. A Circular Viterbi Algorithm); and claim 20 subset [4] - decoding a part of said signal ending at said point (pg. 61 - III. Stopping rules and traceback procedure for the circular viterbi algorithm).

With respect to claim 20, on page 8, the applicant mentions finally, with regard to subset [5], Ramprashad identifies a source coding mode by checking mode bits rather than checking the decoded part with an error protection scheme of a candidate format.

The examiner respectfully agrees with the statement, however points out new NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) teaches claim 20 – subset [5] - performing a check using said decoded part to determine whether the candidate block satisfies an error protection scheme of the given candidate format (pg. 60 – C. A Circular Viterbi Algorithm).

35 U.S.C. 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 20, 23-24, 28, 31-32 and 36 are rejected under 35 U.S.C. 102(b) as being unpatentable over NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg).

With respect to claims 20, 28 and 36 the NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes reference teaches performing a test on candidate formats in turn but refraining from testing further candidate formats once a candidate format passes the test, wherein the test determines whether or not a candidate format is likely to be the format used on the signal and the test, for a given candidate format, comprises (pg. 59 – B. Decoding Algorithms for tailbiting codes); using a Viterbi algorithm to determine trellis metrics for a point in said signal that would be an end point of a candidate block according to the given candidate format decoding a part of said signal ending at said point (pg. 60 – C. A Circular Viterbi Algorithm); determining from said metrics the likelihood of occupation at said point of an end state of an encoding scheme used to create the encoded signal (pg. 60 – C. A Circular Viterbi Algorithm); decoding a part of said signal ending at said point (pg. 61 - III. Stopping rules and traceback procedure for the circular viterbi algorithm) and performing a check using said decoded part to determine whether the candidate block satisfies an error protection scheme of the given candidate format (pg. 60 – C. A Circular Viterbi Algorithm).

With respect to claims 23 and 31, the NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes reference teaches wherein the likelihood of occupation obtained from said metrics is used to determine whether said checking step is to be performed (pg. 60 – C. A Circular Viterbi Algorithm).

With respect to claims 24 and 32, the NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes reference teaches wherein the likelihood of occupation obtained from said metrics is used to determine whether said decoding step is to be performed (pg. 60 – C. A Circular Viterbi Algorithm).

35 U.S.C. 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 25-27 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) in view of Ramesh et al. (U.S. Patent No. 6,917,629).

With respect to claims 25 and 33, all of the limitations of claims 20 and 28 have been addressed. The NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) reference does not teach wherein the given candidate format specifies that the

candidate block has a data part and a checksum part and the checking step comprises generating a corroborative checksum from a part of the candidate block that would be data according to the given candidate format and comparing the corroborative checksum with the said checksum part. The Ramesh et al. reference teaches wherein the given candidate format specifies that the candidate block has a data part and a checksum part and the checking step comprises generating a corroborative checksum from a part of the candidate block that would be data according to the given candidate format and comparing the corroborative checksum with the said checksum part (column 2, lines 13-29). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) and Ramesh et al. to incorporate wherein the given candidate format specifies that the candidate block has a data part and a checksum part and the checking step comprises generating a corroborative checksum from a part of the candidate block that would be data according to the given candidate format and comparing the corroborative checksum with the said checksum part into the claimed invention. The motivation for wherein the given candidate format specifies that the candidate block has a data part and a checksum part and the checking step comprises generating a corroborative checksum from a part of the candidate block that would be data according to the given candidate format and comparing the corroborative checksum with the said checksum part is to provide a more robust communications system allowing

for both the detection and correction of bit transmission errors (column 5, lines 63-64 – Ramesh et al. reference).

With respect to claims 26 and 34, the NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) reference teaches wherein said decoded part contains said data part of the candidate block (pg. 61 - III. Stopping rules and traceback procedure for the circular viterbi algorithm).

With respect to claims 27 and 35, all of the limitations of claims 25 and 33 have been addressed. The NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) reference does not teach wherein said decoded part contains a section only of said data part of the candidate block and the corroborative checksum is generated from said section using an intermediate checksum value as a starting point. The Ramesh et al. reference teaches wherein said decoded part contains a section only of said data part of the candidate block and the corroborative checksum is generated from said section using an intermediate checksum value as a starting point (column 2, lines 13-29). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) and Ramesh et al. to incorporate wherein said decoded part

contains a section only of said data part of the candidate block and the corroborative checksum is generated from said section using an intermediate checksum value as a starting point into the claimed invention. The motivation for wherein said decoded part contains a section only of said data part of the candidate block and the corroborative checksum is generated from said section using an intermediate checksum value as a starting point is to provide a more robust communications system allowing for both the detection and correction of bit transmission errors (column 5, lines 63-64 – Ramesh et al. reference).

Claims 21-22 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) in view of Kuwazoe (U.S. Pub. No. 2002/0051505).

With respect to claims 21 and 29, all of the limitations of claims 20 and 21 have been addressed. The NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) does not teach wherein the step of determining the likelihood of occupation of the end state comprises comparing the maximum metric at the end point with the end state metric at the end point. The Kuwazoe reference teaches wherein the step of determining the likelihood of occupation of the end state comprises comparing the maximum metric at the end point with the end state metric at the end point ([0007] and

[0011]). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) and Kuwazoe to incorporate wherein the step of determining the likelihood of occupation of the end state comprises comparing the maximum metric at the end point with the end state metric at the end point into the claimed invention. The motivation for wherein the step of determining the likelihood of occupation of the end state comprises comparing the maximum metric at the end point with the end state metric at the end point is for high speed with a simple circuit configuration ([0079] - Kuwazoe reference).

With respect to claims 22 and 30, all of the limitations of claims 21 and 22 have been addressed. The NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional Codes (Richard V. Cox and Carl-Erik W. Sundberg) does not teach wherein the step of determining the likelihood of occupation of the end state comprises comparing the maximum metric at the end point with the end state metric at the end point. The Kuwazoe reference teaches wherein the step of determining the likelihood of occupation of the end state comprises comparing the maximum metric at the end point with the end state metric at the end point ([0013 - 0014] and [0024]). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have combined the NPL reference An Efficient Adaptive Circular Viterbi Algorithm for Decoding Generalized Tailbiting Convolutional

Codes (Richard V. Cox and Carl-Erik W. Sundberg) and Kuwazoe to incorporate wherein the step of determining the likelihood of occupation of the end state comprises comparing the maximum metric at the end point with the end state metric at the end point into the claimed invention. The motivation for wherein the step of determining the likelihood of occupation of the end state comprises comparing the maximum metric at the end point with the end state metric at the end point is for high speed with a simple circuit configuration ([0079] - Kuwazoe reference).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Enam Ahmed whose telephone number is 571-270-1729. The examiner can normally be reached on Mon-Fri from 8:30 A.M. to 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques Louis-Jacques, can be reached on 571-272-6962.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EA

11/22/08

/Esaw T Abraham/

Primary Examiner, Art Unit 2112